Summer 2015 Reforestation: 27,875 Trees Planted!

June, July and August were busy months for Alternare and the seven indigenous communities that joined them to plant 27,875 trees in twenty hectares of the Monarch Butterfly Biosphere Reserve’s buffer zone. Seven hundred men, women and children, Alternare’s technicians, and personnel from UNAM’s Center for Research in Environmental Geography (CIGA) all pitched in, helping to select the locations and planting the trees. Additionally, the team also created twenty one tree nurseries for future reforestation projects.

During the 2010-2014 period, Alternare created a data base where they registered sampling sites to monitor tree survival rates. The criteria to select these sites were the year of reforestation, the reforested surface and distance from highways. These three variables were determined in twenty four sampling sites covering approximately eighty hectares. This process was done for the period mentioned above but the necessary field work is still pending to verify the data.

Field work will involve delimiting the reforested area, counting trees that have survived, estimating the slope, measuring the trees’ height as well as noting natural or human factors that affect the results (plagues, cattle, fencing and fertilizer application). These field data will provide the necessary information to re-calculate tree density and estimate their survival rates.

Thanks to MBF’s support, all the parties involved are helping to achieve a change in attitude towards conservation from local communities who are participating in reforestation efforts in increasing numbers. YOU are part of this collective effort, and together we are helping to restore the forests and improve the standard of living of thousands of campesinos.
The Buffer Zone as a Safety Net

We often hear about reforestation efforts in the Monarch Butterfly Biosphere Reserve (MBBR) to replenish land scarred by logging, but where do these reforestations take place? Reforestations carried out by the Monarch Butterfly Fund and other organizations are only allowed within the buffer zone which serves as a protective space for the core zone where the monarch butterflies form their colonies.

In 1986 the first attempt to protect the monarch overwintering habitats covered an area of 16,110 hectares or 62.2 square miles. The area was divided into five conservation zones with each sanctuary composed of a core zone, where monarchs were known to cluster and no logging was allowed, and a buffer zone, where beneficial and controlled logging could occur to benefit local inhabitants.

By the 1993-94 season, only 11 of the 20 colony sites were within the reserve area. Logging in the buffer zone was occurring along watersheds that were known to be essential for the monarch butterflies at the end of their overwintering season. In 1998, a workshop which included academic and government scientists was held. They considered the biological requirements of the monarch butterfly as the main criteria in order to design a new reserve. This effort resulted in the expansion of the protected area in 2000 to a 56,259 hectare (217 square miles) contiguous area that protected most of these watersheds. The core zone of the new area and of the current reserve, includes 15,306 hectares or 59 square miles where logging is banned and an expanded buffer zone surrounding the critical habitat areas of 40,953 hectares or 158 square miles where some activities are permitted. The buffer zone is where limited logging, reforestation, and watershed management occurs and protects the inner core zone where millions of monarch butterflies overwinter. The map on the left depicts the core zone in red and the buffer zone in orange.

The buffer zone protects the inner core where the butterflies spend the winter. While reforestation by the Monarch Butterfly Fund and others takes place exclusively in the buffer zone, we don’t disregard the core zone. Through our experiments we have observed that in some cases after an area is logged it is better to leave areas alone allowing natural regeneration of trees to occur. For a more detailed history about the history of the MBBR, see https://tinyurl.com/qf4z9b6.


Fall Migration

The monarchs arrived in Mexico and now we are all waiting for the official count in December to learn how this year’s population compares to earlier years.

Recently, Journey North noted, “More roosts and larger concentrations this fall are raising hopes for a population increase from the record lows of the past 3 years.” Last year during the fall migration 83 roosts were reported, while this year, there were 145. This is the highest number in the last five years. So far the news is encouraging!

Monarch Larva Monitoring Project shared “signs look promising for an increase in the eastern overwintering population this winter.” Minnesota and Wisconsin had higher densities of monarch eggs and larvae per milkweed plant in 2015 versus 2014. Virginia and Ohio were also higher while Pennsylvania remained the same for both years.

Dr. Chip Taylor of Monarch Watch is predicting at least a doubling of the population from last year. “All the data sheets aren’t in but a count of representative data sheets suggests that almost twice as many monarchs were tagged this year when compared to 2014 (roughly 80,000 or more in 2015). The weather conditions this year were more similar to those of 2011 and it wouldn’t be too surprising to have the overwintering numbers reach the level of that year which was 2.89 hectares.”
Alternare’s Projects

Alternare continues offering workshops to restore and conserve the forests and improve the standard of living of the Monarch Butterfly Biosphere Reserve’s (MBBR) inhabitants. To reduce pressure from the forest and the natural resources of the area, Alternare promotes creating goods using alternative ecological techniques or what is known as ‘ecotecnias’ in Spanish. They focus is on reducing the use of water and wood resources, hence their training workshops emphasize these topics. During the period of May to October, 2015, seven workshops to build fuel-efficient stoves which use 50% less wood were held. Sixty two participants built sixty one stoves: one for a school, one for a community and fifty nine for individual families. To promote water conservation, four cisterns to capture rainwater were built as a result from a workshop with fourteen participants. Additionally, three workshops to build dry latrines were held with nineteen people resulting in the construction of latrines for five families. Through your generous contributions, MBF is pleased to contribute and make all this happen!

Joining Forces for Conservation: The Monarch Joint Venture

Recognizing the need for conservation actions to protect the North American monarch butterfly and its tri-national migration, a number of organizations came together in 2008 to form the Monarch Joint Venture (MJV), a partnership-based organization focused on furthering monarch conservation across the continental United States, through a coordinated, collaborative effort. The MJV has grown to 37 partner organizations ranging from nature centers to national conservation organizations and federal agencies. MBF was one of the founding partners of the MJV and Karen Oberhauser represents MBF on the MJV steering committee.

Monarch Joint Venture priorities are threefold:
1. Monarch habitat conservation on public and private lands, including enhancement and improved management of milkweed and nectar resources throughout monarch breeding and migration habitat, as well as improved management of overwintering groves located along the California coastline.

2. Education and outreach to increase interest, awareness and engagement in monarch conservation efforts.

3. Research and monitoring to track monarch populations and to inform our conservation work.

Partners gather one time each year to network with other partners across the country and learn about current monarch conservation efforts in the U.S. One of the main goals of the MJV annual meeting is to capture the expertise of MJV partners and bring them to the meeting by updating the MJV Implementation Plan. This document is derived from the North American Monarch Conservation Plan (CEC, 2008) and guides the actions of the MJV partnership for the upcoming year. The 2015 meeting was held November 19-20 in Minnesota, where about 50 partner representatives, including MBF Board members, Gail Morris from Southwest Monarch Study and Chip Taylor from Monarch Watch, gathered to discuss conservation, education, research and monitoring efforts for the upcoming year.
Research News

Dr. Cuauhtémoc Saénz, Dr. Arnulfo Blanco and their students continued their project to demonstrate the feasibility of conducting assisted migration of oyamel natural populations to compensate for climatic change in the Monarch Butterfly Biosphere Reserve.

To test the altitudinal upward shift assisted migration, the team initiated a field experiment in July, 2015. They planted 2-year old seedlings at an altitude of 3440 m to anticipate the climatic change expected for the year 2030.

Additionally, this field experiment includes two treatments: seedlings planted with and without coverage of local bushes to test the feasibility of using nurse plants to protect young *Abies religiosa* seedlings from extreme temperatures.

The research is ongoing and will provide valuable information to decide when it is viable to allow the forest to naturally regenerate and when to reforest.

This year MBF gave a grant to doctoral student Miramanni Mishkin to evaluate the success of community based resource management in the indigenous community of Carpinteros with regards to forest conservation in the Monarch Reserve. Carpinteros has a history of sound forest management and Miramanni wanted to discover what contributes to their efficiency.

Through interviews with the community and using a method called Bayesian Network Analysis she identified several characteristics that are influential for efficient forest management in Carpinteros. Among the most relevant features she found were small community size, well defined boundaries, appropriate leadership, shared norms facilitating social pressure and rule enforcement, fair resources allocation (thus discouraging clandestine use), locally devised and easily enforced access and management rules. The community also relies on low-cost exclusionary technology (fences), which aids in the physical protection of their forest boundaries and helps enforce the general rules of conservation established by the Reserve.

We are very pleased with the results of this research as it will allow us to identify the ideal attributes of communities that are successfully conserving their forest so we can support and encourage other communities to do the same.

Dr. Ek Del Val Gortari, MBF adviser and her colleagues, are developing field guides for the Monarch Butterfly Biosphere Reserve to provide information that will help visitors identify the most common species of butterflies, plants, birds, mammals, amphibians and reptiles. They are developing a brochure for each group with illustrations or photographs, including basic information about the habitats of the different species. The end product will be laminated field guides of the different groups of species which will be useful to promote knowledge of local biodiversity beyond the monarch butterfly and consequently promote forest conservation. The National Commission for Knowledge and Use of Biodiversity (CONABIO) is also providing information and will provide reprints when they are required.

In December, 2015, once the guides are completed, Ek and her colleagues will hold workshops with forest rangers and tourist guides in the Monarch Butterfly Biosphere Reserve. The picture on the left shows the cover of the amphibians and reptiles field guide.
Research News cont...

Monarch Butterfly Fund Board Members Ernest Williams, and Lincoln Brower recently published a paper with colleagues Sandra Fischer and Peter Palmiotto (Antioch University) describing a field experiment to see if the mowing of fields containing common milkweed (Asclepias syriaca) could increase monarch reproduction. Strips were mowed in fields in upstate New York in early and late July and in early August. The August mowing proved too late for recovery of the milkweeds, but mowing in July spurred regrowth, and more eggs were laid on the fresh resprouting milkweeds than on the older and taller unmowed plants. In other words, the mowing provided a more suitable habitat for monarch oviposition and larval development than the older milkweeds. An example of the difference in milkweed quality before and after mowing is shown in the adjacent photo. The authors reported that timing of mowing was critical and must be determined for different milkweed species and in different geographic locations. This mitigation procedure could be fostered along roadsides, along edges of agricultural fields and pastures, in Conservation Reserve Program lands, and along power lines and other rights of way to help restore milkweed habitat lost due to the extensive use of herbicides on genetically engineered soybean and corn crops in the USA. Reference: Fischer, S. J., E. H. Williams, L. P. Brower, and P. A. Palmiotto. 2015. Enhancing monarch butterfly reproduction by mowing fields of common milkweed. American Midland Naturalist 173:229-240.

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Check out our New Website

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**MBF Mission:** To foster the conservation of North American monarch butterflies and their migration through habitat restoration, research, monitoring, education and support for sustainable community development in and near the monarch overwintering areas in México.

**MBF Vision:** Healthy ecosystems and sustainable communities that preserve North American monarch butterflies and their spectacular migration in perpetuity.

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Donations to MBF support reforestation, research that is directly related to monarch and monarch habitat conservation, and economic development activities in México. Please consider donating today through our secure on-line site:

[www.monarchbutterflyfund.org](http://www.monarchbutterflyfund.org)

or by sending a check to the following address:

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**$50:** Supports the attendance of two guides at environmental education workshops. These guides will lead eco-tourists into the delicate wonders of the Butterfly Reserve. Our goal for next year is to train at least 200 new resident-guides, providing them with the requisite skills and an understanding of the biology and environmental needs of monarchs.

**$100:** Plants 100 new trees in the monarchs’ threatened forest areas, which includes seed collection, raising the young seedlings, and the distribution and planting of the seedlings. Our goal is to plant high quality seedlings in a community-led process to help restore critical overwinter habitats for monarch butterflies.

**$750:** Pays for one month of professional staff services of trained personnel who ensure that relevant expertise is available to community and private landowners working to restore their property to viable monarch locations.